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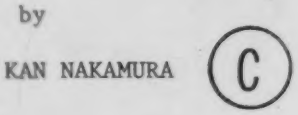
THE EMERGENCE OF QUESTIONS IN RELATION TO AND WITHIN MOTHER-CHILD DYADS

by

GEORGE KAN NAKAMURA 

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH

IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE

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EDMONTON, ALBERTA

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THE UNIVERSITY OF ALBERTA

FACULTY OF GRADUATE STUDIES AND RESEARCH

The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research, for acceptance, a thesis entitled The Emergence of Questions in Relation to and Within Mother-Child Dyads submitted by George Kan Nakamura in partial fulfilment of the requirements for the degree of Master of Education.

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Supervisor

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Date March 10, 1976

To My Mother and Father

Abstract

The purpose of this study was to look further into the verbal behavior of mothers as they interacted with their preschool children, specifically four year olds, beyond what Brady (1969) had done for his doctoral thesis.

A phenomenological approach was taken entailing an inductive method to the study of the mother's verbal behavior. Questions were the major portion of the mother's verbalizations and were looked at in terms of the functions they served in processing information. The questions were used successfully in differentiating the most controlling from the least controlling mothers. Three different kinds of questions were identified: Imposing Questions, Searching Questions and Echo Questions. Imposing Questions were seen as offering least freedom for the child to choose from alternative behaviors, and as indicating a low level of distancing ability (Werner and Kaplan, 1967, p. 42) by the mother. Searching questions were seen as offering some freedom for the child to choose from alternatives, and as indicating an intermediate level of distancing ability by the mother. Echo questions were seen as offering the greatest freedom for the child to choose from alternatives, and as indicating a high level of distancing ability by the mother. No relationship was found between the types of questions used by the mothers and the measures of cognitive development of the child used in this study. A fairly clear relationship was found between types of questions used by mothers and number and duration of mutual glances between mother and child.

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To the children of Mount Pleasant Elementary School of 1974-1975 in the hopes that they may journey through the coming years in freedom and dignity.

To my Mother and Father who through the years have been a constant source of encouragement and inspiration.

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CHAPTER I

INTRODUCTION TO THE PROBLEM

> ....the emergence of a basic directiveness toward knowing....
> (Werner and Kaplan, 1963, p. 11)

> ....I would like to believe it possible for us to plant the seeds of logic in early childhood in ways which foster the interplay of creative imagination and logical reasoning throughout the course of life....
> (Fowler, 1968, p. 36)

The part played by language or verbal behavior in the basic need to know and the development of persons with such logico-creative styles as mentioned by Fowler (1968) is an intriguing yet albeit an important question.

Verbal behavior occurs mainly within a social context. This may seem to indicate that the environment plays the major role in verbal behavior. Does heredity then have little or no effect on verbal behavior? Overton (1973, p. 79) refers to this nature-nuture question as one to which there are alternative conceptions as:

> (a) decomposable into additive components
> versus
> (b) non-decomposable due to strong interactions
> across the course of development.

Each is based on a world view that is incompatible with the other, the first being a mechanistic world view and the latter an organismic world view. For this reason the question cannot be decided on an empirical approach but needs be decided on a rational basis. For the purposes of this paper, the rational choice would be the

interactive conception of the nature-nuture question, the organismic world view.

Verbal behavior is one of the factors involved in this interaction and plays an important part in the development of the child's power of reasoning (Turner, p. 136). It does so as it is part and parcel of the parental control the child is exposed to. More specifically, the focus will be on the part maternal control language seems to play in the cognitive development of the child.

Hypotheses

The foregoing considerations lead to the formulation of the following hypotheses.

Hypothesis I: The measure of maternal control used here will significantly differentiate the mothers imposing greater maternal control from the mothers employing lesser maternal control.

Hypothesis II: Imposing questions (Im's Q's) will significantly differentiate the mothers imposing greater maternal control from the mothers employing lesser maternal control.

Hypothesis III: Searching questions (S's Q's) will not significantly differentiate the mothers imposing greater maternal control from the mothers employing lesser maternal control.

Hypothesis IV: Echo questions (E's Q's) will significantly differentiate the mothers imposing greater maternal control from the mothers employing lesser maternal control. E's Q's

will be differentially, i.e. negatively, correlated with maternal control.

Hypothesis V: The learning style and achievement of the child will be differentially correlated with maternal control.

(i) Response latency will be negatively correlated with maternal control.

(ii) Errors will be positively correlated with maternal control.

(iii) Achievement will be negatively correlated with maternal control.

Hypothesis VI: Visual behavior will be negatively correlated with maternal control.

Definitions and Abbreviations

The following definitions are those as given in Brady's (1969) thesis:

Visual behavior units (VBU). These variables included three kinds of visual behavior; mutual glances, child-mother glances and mother-child glances.

Mutual glance (MG). A mutual glance occurred when there was a direct eye-to-eye contact between mother and child.

Child-mother glance (CM). This glance occurred when the child looked at the face of the mother without the mother reciprocating at the same time.

Mother-child glance (MC). This occurred when the mother glanced

toward the face of the child without the child reciprocating at the same time.

Learning style. For the purposes of Brady's (1969) study, the learning style of the child was indicated by response latency and number of errors to Brady's test of learning style (see Appendix C, pp. 72, 73).

Response Latency (RL). This was the time in seconds taken from the presentation of a stimulus to the initial response of the child.

Errors (E). Errors were the number of incorrect choices made.

Achievement. This was reflected in the sorting (objective sort) of blocks on the basis of color, shape and size and the verbalized comprehension of the sort (subjective sort).

Objective Sort (OS). This sort was the completed separation of the blocks on the basis of three categories of color, shape and size.

Subjective Sort (SS). This was the verbalization of the reasoning behind making each of three categories of sort.

The following definitions and abbreviations are those which were adopted for this study.

Maternal control. Maternal control was operationalized as the difference between the percentages of Im's Q's and E's Q's.

Warmth. Warmth was assumed to be reflected in the smallest differences between the percentages of Im's Q's and E's Q's.

Maternal control language. Maternal control language was assumed to be composed of questions reflecting different amounts of

maternal control.

Imposing questions (Im's Q's). Im's Q's were questions which seemed to impose information on the child and were felt to indicate the greatest amount of maternal control.

Searching questions (S's Q's). S's Q's seemed to seek, obtain or offer information and seemed to indicate less maternal control than the Im's Q's.

Echo questions (E's Q's). E's Q's seemed to reflect information so that the receiver would recheck his own prior statement. Such questions seemed to involve the least amount of maternal control.

Instruction questions (In's Q's). In's Q's are related to the instructions that were given to the mother before she entered into the experimental situation (for instructions given to the mother, see Appendix B).

Limitations of the Study

(1) The study was limited to the investigation of twenty-six middle socio-economic class mothers and their four year old children.

(2) The study was limited to an investigation of certain verbal behaviors employed by the mother in interacting with her child within an experimental situation.

(3) The study was limited to examining correlations between events and so does not attempt to indicate casual occurrences.

(4) The study was limited to investigating the verbal behavior of the mother only.

CHAPTER II

REVIEW OF LITERATURE

> ....to see beings coming out in their being without fetching them out (Welch, 1973, Preface xvii)

Overview

A review of the literature is presented in which two characteristics of the mother-child relationship will be outlined. Initially, the material on the regulatory system employed by the mother or maternal control, will be presented. This will be followed by some information on the maternal control language. Finally, the approach to be utilized in this study will be presented.

Maternal Control

As indicated previously, the interactional conception of the nature-nuture question was the rational choice for this paper. It is the interaction of all the factors involved. Of major importance is the interaction of all the members of the home environment. Such interaction plays an important role in the development of the personality characteristics of the child, one being the development of cognitive ability. The interaction is especially important in the development of the preschool child, most of whose waking hours are spent in interaction with the mother (Kagan, 1964; Levin and Fleischmann, 1968; Schaefer, 1959; Schmidt, 1973). Brady (1969) hypothesized that it was what the mother does, in her attitudes and in her language which might hold clues to the cognitive

development of the child. What the parents do rather than what they are is held to be central to the setting of the home environment (Dave, 1963; Wolf, 1964).

Maternal control was felt to be one dimension in the attitude of the mother. Maternal control encompasses the kinds and amount of the mother's behavior that attempts to control the behavior of her child. Rebhun (1967) indicated that there is a relationship between dogmatism and maternal control. Dogmatism, on the other hand, was demonstrated to have a relationship with the cognitive process (Fillenbaum and Jackson, 1967; Rokeach, 1960). Maternal control as a result could be relevant to cognitive development. Hess and Shipman (1968, p. 93) put it in these words,

> .....the growth of cognitive processes conducive to success in formal educational settings is fostered in family control systems which offer a wide range of alternatives of action and thought, and it is constricted by systems of control which offer predetermined solutions and few alternatives for consideration and choice.

The home environment which offers and permits many alternatives of action and thought facilitates cognitive growth. Those home milieus which restrict the alternatives of action and thought impede the growth of the cognitive processes in the child. The question of alternatives is an important one to which there will be fairly constant reference in the development of this thesis. Getzels and Jackson (1962) report that children with high intelligence but with low creativity have parents who tend to exert more control over their children than parents of children with low intelligence but with high

creativity. These latter children tend to be more ludic and more flexible. Starr (1965) found that there was a relationship between the authoritarianism of the parent and the authoritarianism of the child. Strict discipline also was shown to be significantly related to both authoritarianism and dogmatism of the parents. Dogmatism of the parents was inversely related to many cognitive skills, one of which was problem solving (Fillenbaum and Jackson, 1967; Rokeach, 1960; and Klein, 1966). Others (Frenkel-Brunswick, 1948; Blum, 1954; and Starr, 1965) found that maternal control tended to restrict cognitive functioning and such attitudes were promoted by the children. Wahba's (1971) study confirms the dysfunctional effects of coercive power. "Coercive power creates inevitable social conflict and reward power produces negative results once it is attached to the threat of coercion." In the school environment, Allen (1957) discovered that authoritarian teachers were less likely to maintain a stable, productive and harmonious atmosphere, whereas the non-authoritarian teachers did. In a sociological analysis of parental authoritarianism, Kohn (1959) reported that, as a result of the discipline the lower class children encountered, they tended to look for external control of their behavior, whereas the middle class children tended to develop internalized control over their behavior. Bernstein (1961) and Hess and Shipman (1965, 1966) came up with similar findings. Consider the following statements of Hess and Shipman (1968, p. 103):

> The cognitive environment of the culturally disadvantaged child is one in which behavior is controlled by imperatives rather than by attention to the individual characteristics of a specific situation, and one in which behavior is neither mediated by verbal cues which offer opportunities for using language as a tool for labelling, ordering and manipulating stimuli in the environment, nor mediated by teaching that relates events to one another and the present to the future... This environment produces a child who relates to authority rather than to rationale, who may often be compliant but is not reflective in his behavior, and for whom the consequences of an act are largely considered in terms of immediate punishment or reward rather than future effects and long range goals. If this general picture is valid, it would seem that the goal of early education is to promote the development of strategies or structures for dealing with information, rather than merely transmitting a supply of concepts, information, and mental skills.

Maternal Control Language

As this paper will be concerned in the main with the language of maternal control, there will be a short résumé of the verbal aspects of maternal control as it has been dealt with in a number of studies (Brady, 1969; Levine, 1974; Hess and Shipman, 1965, 1966; Greenglass, 1971; Bernstein, 1973; Tari, 1971). It is to be noted that the non-verbal aspects are important too, but as the initial impetus for this paper was to extend that part of Brady's study on the verbal aspects of the maternal regulatory system, it will be left to other studies to cover the non-verbal features of maternal control (Hore, 1968; Brady, 1969; Darrah, 1971; Levine, 1974).

Brady (1969) employed a word count approach (Loban, 1963;

Hunt, 155; Hore, 1968) in the study of maternal control. His results indicated that with greater maternal control, there was less verbalization by the child. When maternal control was minimized, there was a tendency for the child to verbalize as much as the mother. This child also obtained a higher response latency and fewer errors, Brady's (1969) two measures of cognitive achievement.

Levine (1974), in investigating the possibilities of interrelationships between different channels of communication, found three verbal maternal control styles. In the first, termed environmental control, the mothers influenced their children mainly, through the use of statements and suggestions. This style was efficacious in promoting positive consequences in both parent-child interaction and child development. For the second style, he coined the terms attention control, wherein the mother employed many questions and elicitors. An elicitor, according to Levine, was an utterance "with questioning intonation indicating a previous question was not answered" (1974, p. 47 footnote). There might be two separate processes involved here. Mothers using questions would have greater control than mothers using elicitors. Person control was the third maternal control style elucidated. Commands and restrictions were the "order of the day" within this style. Herein was the greatest amount of maternal control exerted with much conflict and unhappiness resulting. This was a picture much the same as the tug-of-war factor delineated by Hess and Shipman (1966, p. 12). The tug-of-war factor described a situation wherein a non-attending child was pitted

against an increasingly impellant mother. Levine (1974) indicates that the environmental control style was most able to promote positive consequences in both parent-child interaction and child development.

Hess and Shipman (1968) defined three types of maternal control, the first of which was the imperative-normative. Here, the appeals are to the social norms, what is thought and felt to be right and proper and, to the power and authority of the person or persons laying down the rules. Alternatives of action, to consider, to compare, to evaluate or choose do not exist. Thinking is not required, nor is any complex linguistic communication.

In the second type of maternal control, the personal-subjective, it is not wholly an authoritarian approach for the demands and norms are qualified by consideration of the motivations, intentions, and subjective states of the child. Such a regulatory approach entails a somewhat more specific and complex form of language, while at the same time, indicating to the child the importance of salient aspects within his particular life-space. In other words, there is some respect shown for the dignity of the child and there is somewhat more freedom granted to the child than there was in the imperative normative approach.

Thirdly, in the cognitive-rational, the manner of control is mainly an appeal to rationality. There is a consideration for the results of a sequence of events, for the long term end result, the advantages to be garnered from it and for the principle which encom-

passes the reasons underlying a request or rule. Such explanations are more involved than imperative appeals, calling for more complex linguistic processes, more cognitive activity and for more attention on the part of the child. Choice is offered betwixt a number of alternatives which could flow from different immediate implementations.

This approach offers ways of considering future consequences and ways of symbolically manipulating his world. Many more alternatives are open for the child to pursue. How the child would behave is more or less left to his discretion. Such is the approach that is described in Navarra's little gem (1955) in which "Little Boots" is offered many explanations for his numerous questions in a way which pays homage to his being a person in his own right.

In a later study, Hess and Shipman (1968, p. 101) found "that the tendency to use imperative statements is negatively related to the child's cognitive performance for both the total group and within the three working class groups." The working class group tended to use more imperatives than the middle class group. The authors indicate that the greater the maternal control via such imperative statements, the greater the limitations set upon the potential cognitive development of the child.

Greenglass (1971) analyzed assertions of maternal authority (maternal control) in a cross-cultural study involving mothers of two ethnic groups, Italian and Canadian. She hypothesized that utterances could be classified under the assumption that there are

four functions of language. These functions are:

(1) to convey information
(2) to please (evaluations)
(3) to move others to action (demands)
(4) to defend oneself (justifications) (p. 686).

Italian mothers were found to be using more demands, direct imperatives, requests for orientation, requests for information or evaluation and communicated less with their children. Such seem to be characteristics embodied in a mother exercising a good deal of maternal control. Canadian mothers on the other hand, employed more requests for justifications, more justifications based on normative appeals than concrete appeals. Concrete appeals call on lower levels of abstraction whilst normative appeals involve higher levels of abstraction. Less maternal control appears to be the way of the Canadian mothers. It was a descriptive study which did not question whether maternal control had any effect upon the cognitive development of the child.

One major research worker in this area of inquiry is Basil Bernstein. In his investigations of the interrelationships between social structures, language and control of behavior (1962 b, 1970 a), he delineates two linguistic codes associated with two approaches to maternal control (two modes of control). Restricted codes which are stereotyped, condensed, of implicit meaning, all of which tend to limit the range and detail of any information involved, is associated with the imperative mode of control. This mode of control seems to leave little room for the child to choose among alternative forms of behavior, whether verbal or non-verbal. The child can only rebel,

withdraw or accept. Such verbal codes and modes of control are characteristic mainly, of the politically suppressed or the "'lower' socio-economic levels." The second type of linguistic code, the elaborated, is more precise, more differentiated, more specific to that situation, person or topic, more explicit in meaning so that there is a wider more complex range of thought which in turn, makes the differentiation between cognitive and oretic content possible. The elaborated code is associated with both the imperative mode of control and modes of appeals. Modes of appeals are categorized as positional appeals or personal appeals. Positional appeals refer the child's behavior to norms related to status. Such appeals are said to be communalized. Personal appeals consider the intention and disposition of the child. Such an appeal is individualized. An approach encompassing both restricted and elaborated codes which employ both imperative and appeal modes of control is characteristic of the "'middle' socio-economic class."

Bernstein's research (1961, 1965) indicates that maternal control based on the imperative mode via the restricted code is more detrimental to the cognitive emotional development of the child than maternal control employing the two modes of appeals via the restricted and elaborated codes.

In a related study to maternal control and maternal control language, on paternal child-rearing practices and its relationship with achievement motivation, Tari (1971, p. 39) found that:

> even the developmentally highest level, (of father's child rearing practices), independence granting behavior, suffered when paired with dimensions or variables of Control or Communication (insertions mine).

It seems communication may have been employed a great deal of the time as a control mechanism: Control, of any kind, it would appear restricts the child's attempt to explore and to gain competence from such endeavors.

The foregoing literature on maternal control and maternal control language has highlighted the importance of each in the cognitive development of the child. The greatest amount of maternal control, partly by way of language, appears to restrict the cognitive development of the child. The least amount of maternal control appears to abet and encourage the cognitive development of the child.

In the review of the literature on maternal control language, except for Greenglass (1971) none had considered the functional use of language in maternal control. Greenglass's study might have been more adequate if she had not, as she herself notes, overlooked the educational background of the mothers. Bernstein (1973, Introduction p. 8) himself regrets "that my own work until recently was insufficiently developed, was insufficiently explicit, to take full advantage of Halliday's researches". Halliday (1970 a, 1970 b) feels language "is as it is" as a result of "the uses to which it is put" (Bernstein, 1973, p. 145). In order to describe the structure of the language, we must needs consider its use. Halliday has looked more deeply into the functional use of language than we feel it is

necessary for the purposes of this paper. It is terms of the "regulatory function", the "do as I tell you function" (Bernstein, 1973, p. 350), that the language of maternal control will be examined as it reflects some dimensions of the mother's personality. Also, there will be an attempt to employ an inductive approach to the analysis of the available data. Such is the general intent of this study.

CHAPTER III

RATIONALE FOR METHODOLOGICAL CONSIDERATIONS AND METHODOLOGY

> The aim of teaching....is....to lead the learner to ask significant questions....
> Schmidt, 1973, Preface xvii.

RATIONALE

An inductive approach seemed to be imperative when an investigation into the phenomenological aspects of the child-mother protocols revealed that it seemed to be the only way an analysis could be carried out. This may have been inevitable in the sense that there were no operational directives available for such an investigation.

The original intent was to look at the affective aspects of maternal control language by way of the intonational patterns. Could the intonational pattern superimposed upon the grammatical structure indicate affect? Lieberman (1967, p. 2) suggests that it may. Stockwell (1960 b) has gone so far as to write generative grammar rules for suprasegmentals. Reservations have been expressed by Lieberman (1967, p. 126) when he suggests that even trained linguists cannot agree on some aspects of intonational patterns. One prominent aspect of intonational patterns is the rise or fall at the end of the sentence, often indicating a question had been produced. On a cursory examination of the protocols, questions were found to be the major form of maternal language. Was it possible to use a question as a basic unit of investigation? With the emergence of

this query the emphasis of the original intent has now been shifted from a consideration of the affective to a consideration of the cognitive aspects of the child-mother relationship.

A question is one kind of sentence. Pike (1967, p. 145) notes that:

> Linguistics in the past three decades made its most striking progress by dealing with units no larger than sentences.

Bloomfield (1933 a, p. 170) states that "each sentence is an independent linguistic form, not included by virtue of any grammatical construction in any larger linguistic form". Isolatability is specifically a characteristic of the sentence. Chomsky (1957 a, p. 13) notes that:

> From now on, I will consider a <u>language</u> to be a set (finite or infinite) of sentences.

A sentence then may be considered as the most general feature of the structural description, structure being "a name for the effective pattern of relationships" (Whyte, 1954, pp. 27, 28). Questions then, are part of a structural description which may be employed as basic units of investigation.

On initial examination of a protocol, there were questions ("true questions") which seemed to be requesting an answer, or which seemed to ask for confirmation, both of which were given; questions to which a motor expressive response was given; questions to which no response was given but which had been uttered with the intent to elicit a response; questions which were not finished or completed

but which were intended to clarify the situation; and, finally, questions ("psuedo-questions") which were uttered with no regard for an answer or for the child. How could these questions be categorized? It seemed as if Bloomfield's (1933) approach to the study of language (in this case, maternal control language) was the only answer. His approach was the structural approach.

In looking for other structural approaches, Owen Thomas's (1965, pp. 177-178) categorization of questions was found. He listed seven different kinds of questions. His last one was termed the "echo question" (E's Q). It was a question with rising intonation at the end.

"The boy was sleeping under the t^{r}ee?" Such questions seemed to ask the receiver to review his whole statement or "recheck his whole state of readiness or orientation." In other words, he (the receiver) was being asked to recheck his own formulations or informations. Information here was being reflected. The processing of information could be considered as one of the functions of the "echo question" (E's Q). Turner (in, Bernstein, 1973, p. 146) notes that:

> It is important to stress that Halliday argues that most sentences express a combination of functions. Moreover the functions are expressed simultaneously.

Here it is to be noted, there has been a shift, a veering from an emphasis on the structural aspects, the overt or observable grammatical form to an emphasis on the covert aspects of that grammatical form. With such a shift, relationships not only within language

but relationships with other aspects of the mother-child relationships were now possible. It would seem as if relationships of language with the psychological, sociological or even spiritual aspects could be investigated. This could be done in terms of function, that is, of the use to which questions could be put.

If the "echo question" can be considered in its relation to maternal control, then it would seem there is very little maternal control being exerted. The child is given the opportunity to consider as many aspects or alternatives to the question as he would like. He is offered the freedom to do so. If maternal control were to be considered as being on a continuum, with the least amount of maternal control being exerted, the "echo question" (E's Q), on one end of the continuum, then, on the opposite end of the continuum where the greatest amount of maternal control was to be applied, what kind of question might be found? In our initial analysis of a protocol, we had noted the "pseudo questions" which were posed without any regard for an answer or any regard for the child. This was an "autocentric" form of language (Schachtel, 1959, p. 83). It may be noted in passing, that the interval between the utterance of the "pseudo question" and the following verbalization by the mother is often minimal so that there is no opportunity for the child to respond verbally or non-verbally. The following is one example of "pseudo questions" with an aside:

> Do you think they are running after the gingerbread man? (aside - "Take your hand out of your mouth!") Are they going for supper or are they going to look for berries or are they going to look for the gingerbread man or are they just going for a walk or are they going to school?

"Pseudo questions" seem to entail a great amount of maternal control. If such questions could be considered from the viewpoint of information processing then, here, we could say there is an imposition of information. There are no possible alternatives the child could take for he is not given an opportunity to consider the questions, let alone have the time to consider alternatives. He can only rebel, withdraw or accept. Such questions could be and will so be tagged as "imposing questions" (Im's Q's). So far there has emerged a dichotomy, two kinds of questions, E's Q's and Im's Q's.

Further analysis indicated that there might be a third category of questions. There were questions which were put in such a way as to appear to seek, obtain or offer information. These questions seemed to highlight salient aspects of the child's life space. Alternatives to consider were offered though they were limited. Information was not reflected, nor was it wholly imposed. It was partially imposed in the sense the child was directed to certain aspects within his environment. Such questions are as follows:

> "Who has one of these?"
> "What's the baby doing?"
> "What about these?"
> "How does it work?"

These questions were reminiscent of the "true questions" we had met in our initial analysis of a protocol. There appears to be a searching for information. These questions heretofore, will be referred to as "searching questions" (S's Q's).

In terms of maternal control, consideration may be given to Im's Q's as seeming to exert the greatest amount of maternal control by imposing information on the child. No alternative actions were possible. The S's Q's seemed to involve some maternal control by offering or searching for salient aspects of the child's life space. Some alternative actions were possible but were limited. Finally the E's Q's, with little maternal control being involved, reflected the information given by the child. Such an approach left all possible or alternative forms of action open for the child. With such a categorization of questions as a base, it would seem maternal control and its effect on the cognitive development of the child could be assessed. The kind and number of questions which emerge in the interaction of the mother with her child might help in advancing our understanding of the relationship between maternal control via maternal control language and the cognitive development of the child. The methodology of one such undertaking will be presented. A description of the sample, experimental procedures, instruments used, the verbal variables chosen and the statistical analysis will follow.

METHODOLOGY

The Sample

The 1967 City of Edmonton census data was used by Brady (1969)

to fixate an area representative of middle socio-economic status. Thirty-two dyads from this area were obtained in order to solicit their co-operation in the experiment. Brady outlined the following data in Table I which indicates the representativeness of the sample according to criteria as set out by Hore (1968) and Blishen (1958).

TABLE I

DESCRIPTIVE SOCIO-ECONOMIC DATA

SES (Blishen Index)	Mean:	54
	Range:	43 to 75
Combined Average Number of Years Education for Mother and Father	Mean:	11.5
	Range:	8 to 18
Combined Income of Mother and Father	Under $5,000 per annum	N 2
	Between $5,000 and $10,000 per annum	N 21
	Over $10,000 per annum	N 7

Brady's (1969, p. 37) summary of the data follows:

> Socio-economic data indicated the sample was upper-middle class. Hore's (1968) sample of high SES and low SES had average Blishen Indexes of 71.15 and 45.94 respectively. This sample had an average Blishen Index of 54 which fell between Hore's samples. The other two indexes of socio-economic status positioned themselves similarly in relation to Hore's sample (1968, p. 25-26). The number of people earning over $10,000 per annum and the mean Blishen Index of 54 for the present sample indicated that the socio-economic status was upper-middle class.

The children, ranging in age from four years to four years and eleven months, had not had any kindergarten experience. The seventeen boys and fifteen girls were of normal intelligence. Their normal intelligence was indicated by their results on the Van Alstyne Picture Vocabulary Test which has a correlation of 0.71 with the Stanford-Binet for this age level. To ensure that the mothers were not below average in verbal ability, the vocabulary section of the Wechsler Adult Intelligence Scale was administered. All the subjects met the foregoing conditions.

Experimental Procedure

Videotape recordings of the interaction between thirty-two mother-child dyads in a structured situation, were produced by the Audio-Visual Media Department of the University of Alberta in co-operation with Brady (1969). An initial play period where the child was allowed to manipulate a number of toys on the table set the stage for the interplay between the mother and child. The toys were left on the table for the rest of the time in order to create a

situation wherein the mother would have to control the dynamics of the situation. After the play period, the mother was to teach her child how to separate blocks on the basis first, of color, next, of shape, and finally, of size. When this was completed, the mother was given three Children Apperception Test cards, each of which was to have a story made up by the mother working in conjunction with her child. When the story telling was completed, the mother and child were taken to separate cubicles where the mother answered the PARI and a small questionnaire regarding socio-economic background. The child was given Brady's Test of Learning Style.

The Verbal Variables

A phenomenological approach to the analysis of the data, helped to highlight the importance of questions by the mother which seemed to emerge from the interaction with her child. The questions were categorized on the basis of how they seemed to be functioning, how they seemed to be used, and/or how they seemed to process information. Three different approaches to processing information were described herein, on pages 27-31. Echo questions (E's Q's), searching questions (S's Q's) and imposing questions (Im's Q's) were placed on a continuum of low to high maternal control, E's Q's encompassing low maternal control, S's Q's intermediate maternal control and Im's Q's high maternal control.

Assessment of the Verbal Variables

The audio tapes and their scripts were analyzed in conjunction. The number of the three kinds of questions by the mother were counted.

It was felt that such a numerical count of the three types of questions would be a way of operationalizing the amount of control the mother used.

Assessment of Maternal Control

Schaefer and Bell (1958) had devised a test, the Parent Attitude Research Instrument (PARI) of Maternal Control. The PARI is a bidimensional attitude scale describing maternal social-emotional behavior on the two dimensions of autonomy-control and love-hostility. One hundred and fifteen of the most reliable items out of a large pool of items (internal consistency ranged from .34 to .77, Brady, 1969, p. 41) were chosen, then arranged into twenty-three sub-scales. A first factor, "approval of maternal control of the child", were loaded with sixteen of the sub-scales. Such was the approach utilized by Brady (1969) in his assessment of maternal control.

For the purposes of this thesis, as mentioned beforehand, a frequency count of the three types of questions (Im's Q's, S's Q's, E's Q's) was made in order to operationalize the amount of control the mother employed. It was assumed that the difference between the total of Im's Q's and the total of E's Q's would help to differentiate two groups of mothers, one, exercising low control, the other, high control and give us a measure of maternal control.

Assessment of Objective and Subjective Sort

The assessment of "objective sort" (OS) entailed the child's ability to "sort" twelve Vygotsky blocks according to color, shape

and size. OS was the number of blocks correctly sorted according to first, color, second, shape and finally, size.

The assessment of "subjective sort" (SS) was more difficult to determine as it was an estimation of the child's ability to verbalize his reasons for making the kind of sort he did. Such verbalizations were rated on a concrete to abstract continuum. SS and OS were considered as measures of cognitive achievement.

Assessment of Learning Style

The assessment of learning style consisted of twenty test cards. On each card that the child was shown, there was a standard design below which were several similar designs, only one of which was an exact replica of the standard. The time taken to make the initial selection and the number of errors made were considered as a measure of reflectiveness.

Statistical Analysis

The difference between the percentages of Im's Q's and the E's Q's for each mother was used as a measure of maternal control. The mothers were ranked in order according to this criteria of maternal control. The median was used as a means to divide the twenty-six mothers into two groups. Only twenty-six mothers were qualified as two mothers (#1 and #7) had no toy section on their tapes or transcripts; one (#6) was incomplete; scores for response latency and errors were not recorded for two children (#15 and #19). The distribution of the frequencies of the three kinds of questions

on another mother (#32) were such as to be potentially categorized quantitatively as a more controlling mother when theoretically it was potentially qualified to be a less controlling mother (frequencies of Im's Q's - 6, of E's Q's - 22). Such being the case, it was assumed it was not possible to categorize this mother on the basis of our present criteria. This case was left out of the statistical analysis.

The difference between the means of the two groups of mothers were tested by the Student's 't' test of significance (Ferguson, 1971, p. 141). Once this was done, 't' tests of significance were run on the three kinds of questions Im's Q's, S's Q's and E's Q's.

The hypotheses relating to the three kinds of questions were tested using Spearman's Coefficient of Rank Correlation.

Results

Reliability

Reliability of the three kinds of questions indicated satisfactory inter-rater reliability on these protocols.

Reliabilities were

Im's Q's	= 0.8
S's Q's	= 1.0
E's Q's	= 0.95

Reliabilities were calculated using the Spearman Coefficient of Rank Correlation (ρ).

Hypotheses

Hypothesis I

The measure of maternal control used here will significantly differentiate the mothers imposing greater maternal control from the mothers employing lesser maternal control.

TABLE II

't' TEST OF SIGNIFICANCE OF THE DIFFERENCE BETWEEN TWO GROUPS OF EIGHT MOTHERS USING DIFFERENT AMOUNTS OF MATERNAL CONTROL FROM THE TWO ENDS OF A DISTRIBUTION OF MATERNAL CONTROL

	Group A (Greater Maternal Control) (N=8)
Group B (Lesser Maternal Control) (N=8)	14.59***

***Significant Beyond the .001 Level of Confidence

TABLE III

't' TEST OF SIGNIFICANCE OF THE DIFFERENCE BETWEEN TWO GROUPS OF THIRTEEN MOTHERS USING DIFFERENT AMOUNTS OF MATERNAL CONTROL

	Group A (Greater Maternal Control) (N=13)
Group B (Lesser Maternal Control) (N=13)	7.86***

***Significant Beyond the .001 Level of Confidence

The results obtained were highly significant.

Hypothesis I was confirmed.

Hypothesis II

Imposing questions (Im's Q's) will significantly differentiate the mothers imposing greater maternal control from the mothers employing lesser maternal control.

TABLE IV

't' TEST OF SIGNIFICANCE OF THE DIFFERENCE BETWEEN TWO GROUPS OF THIRTEEN MOTHERS USING DIFFERENT AMOUNTS OF MATERNAL CONTROL (Imposing Questions - Im's Q's)

Group A (Greater Amount of Im's Q's) (N=13)	
Group B (Lesser Amount of Im's Q's) (N=13)	2.975**

**Significant Almost at .01 Level of Confidence = 2.977

Hypothesis II was confirmed. The correlation of maternal control with Imposing Questions was significant.

Hypothesis III

Searching questions (S's Q's) will not significantly differentiate the mothers imposing greater maternal control from the mothers employing lesser maternal control.

TABLE V

't' TEST OF SIGNIFICANCE OF THE DIFFERENCE BETWEEN TWO GROUPS OF THIRTEEN MOTHERS USING DIFFERENT AMOUNTS OF MATERNAL CONTROL (Searching Questions - S's Q's)

Group A (Greater Amount of S's Q's) (N=13)		
Group B (Lesser Amount of S's Q's) (N=13)	-2.23*	

*Significant at .05 Level of Confidence

The result was significant. Hypothesis III was not confirmed.

Hypothesis IV

Echo questions (E's Q's) will significantly differentiate the mothers imposing greater maternal control from the mothers employing lesser maternal control. E's Q's will be differentially, i.e. negatively, correlated with maternal control.

TABLE VI

't' TEST OF SIGNIFICANCE OF THE DIFFERENCE BETWEEN TWO GROUPS OF THIRTEEN MOTHERS USING DIFFERENT AMOUNTS OF MATERNAL CONTROL (Echo Questions - E's Q's)

Group A (Greater Amount of E's Q's) (N=13)	
Group B (Lesser Amount of E's Q's) (N=13)	-4.47***

***Significant Beyond .001 Level of Confidence

Hypothesis IV was confirmed. The results were significant and were differentially correlated with maternal control. Results were in the predicted direction.

Hypothesis V

The learning style and achievement of the child will be differentially correlated with maternal control.

(i) Response latency will be negatively correlated with maternal control.

(ii) Errors will be positively correlated with maternal control.

(iii) Achievement will be negatively correlated with maternal control.

TABLE VII

CORRELATIONS OF MATERNAL CONTROL WITH THE LEARNING STYLE AND ACHIEVEMENT OF THE CHILD

Learning Style (N=26)		Achievement (N=26)	
RL	E	OS	SS
-0.268	0.088	0.30	0

The results were not significant. Hypothesis V was not confirmed. The correlation of maternal control with response latency (RL) went in the predicted direction but objective sort (OS) did not.

Hypothesis VI

Visual behavior will be negatively correlated with maternal control.

TABLE VIII

CORRELATIONS OF MATERNAL CONTROL WITH VISUAL BEHAVIOR VARIABLES

	Mutual Glances (N=25)	Mother-Child (N=25)	Child-Mother (N=25)
Number of VBU	-0.586**	-0.98	-0.204
Duration of VBU	-0.434*	-0.447*	-0.281

* Significant at .05 Level of Confidence

**Significant Beyond .01 Level of Confidence

(N=25 as there were no results on one mother, #11, for the visual behavior variables)

Summary

All the results were in the predicted direction. The correlation of maternal control with the number of mother-child glances were not significant. The correlations of maternal control with the numbers and duration of child-mother glances approach significance. The correlations of maternal control with the number, duration of mutual glances and duration of the mother-child glances were significant. Generally, Hypothesis VI was confirmed.

CHAPTER IV

DISCUSSION, IMPLICATIONS AND A CONCLUDING STATEMENT

> .....one issue of prime interest for study: the different characteristics comprising adequate symbolic formulation under varying degrees of interpersonal distance.
> (Werner and Kaplan, 1963, p. 49)

Overview

A descriptive review of what was attempted will be followed by certain selected data taken from the protocols of both the greater and lesser maternal control group of mothers. There will be an attempt to discuss the findings in relation to Werner and Kaplan's foregoing suggestion. Some implications flowing from the results found will be followed by a concluding statement. A general view of the kind of person we might like to see developed in our culture will comprise the conclusion.

DISCUSSION

The basic intention was to attempt to investigate further the verbal aspects of Brady's (1969) doctoral thesis. Brady (p. 17) states that:

> .....Maternal language itself appears important. How the language meshes with the control dimension is less apparent but equally in need of investigation.

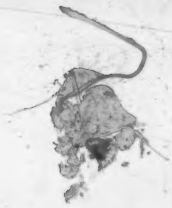
This investigation was an attempt to make some inroads in this direction.

On the basis of a phenomenological examination of the protocols and the inductive process involved, it was felt that a deduction could

be made. It was deduced that the language of maternal control was open to a functional interpretation. Halliday (in, Bernstein, 1973, p. 145) feels that "in order to explain the structure of language we need to consider its use". Halliday (in, Bernstein, 1973, p. 353) has delineated seven initial functions of language amongst which one of the primary ones is the regulatory function, controlling the behavior of others, the 'do as I tell you' function. Maternal control language within the protocols was categorized into three kinds of questions, each category being related to the amount of maternal control involved. A numerical count of the three different categories of questions was made to operationalize the procedure so that a statistical check could be carried out. Statistical results vindicated the viability of such a functional approach to maternal control.

The following excerpt from a representative protocol of the group of mothers employing greater control may reflect the flavour of the control that was present (M = mother, C = child).

M. I don't think so. I think they are doing something else that little children do at school lots of times when they're outside having recess, eh? What's that? (S's Q') Hmm?
C. Yeah.
M. They're running, aren't they? (Im's Q')
C. Yeah.
M. So they're having a race and who's winning? (S's Q') Yea, can you give him a name? (S's Q').
C. Don't want to....
M. Oh, you want to give him a little boy's name, wouldn't you? (Im's Q)
C. O.K. hmmmm.....ummmm, ummmm. George.



M. George, O.K. So George is winning the whole race, isn't he? (Im's Q')
C. Yeah.

What is evident here is the paucity of the child's verbalizations. Of more importance, is the directiveness and the imposition of information placed upon the child. The mother directs the line of thought when she indicates that what "little children do at school" is that "They're running, aren't they?". When she answers her own question as to "who's winning" with another question without waiting for a reply from her child, she again is directing the line of thought. Her reply is "Yeah, can you give him a name?". The child is not given the freedom to express his own ideas, nor is he given the opportunity to choose from different alternative answers that could arise to the questions. The mother is imposing information when she asks "They're running, aren't they?".

In contrast, the following is an excerpt from a representative protocol of the group of mothers employing little control.

C. How do they get the gun started?
M. Oh, I don't know, how do you get it started? (E's Q')
C. You push this thing back in to press the button down and it makes a loud noise.....Hey, Mommy, this one's broke, isn't it?
M. Its broke? (E's Q')
C. Yeah, look how (the rest was unintelligible).

In reiterating the child's question of "How do they get the gun started", the mother reinforces the child's involvement by asking "how do you get it started." The child is given the opportunity to structure the situation as he sees it. The mother's question

releases whatever information or ideas the child may have and he eagerly presents his ideas. The child is involved.

Navarra (1955, p. 29) described such a sequence thusly:

> .....the child seemed to become self-involved in meaningful activity.... became completely involved in what he was doing....child concentrated.... this concentration was probably due to the quality of meaning this activity had from the viewpoint of the child.... The study of play activity....The study of spontaneous actions seemed to be the only possible way to provide for a necessary wide range of play activity. This way a type of "non-directive" approach allowed the child to follow his inclinations.

Initially it was anticipated that the difference between the percentages of Im's Q's and E's Q's would reflect the amount of control a mother employed. On this basis of maternal control, the mothers were divided into two groups. A visual representation of the two groups is given in Figure 1. The results indicated that the two groups were significantly different, beyond the .001 level of significance. The difference between the percentages of Im's Q's and E's Q's could be used as a measure of the amount of control a mother used. Figure 2 presents a histogram which illustrates these differences.

The next question that emerged was whether each of the three kinds of questions would differentiate the amount of maternal control employed. It was assumed that both the Im's Q's and E's Q's should but that there was uncertainty as to whether the S's Q's

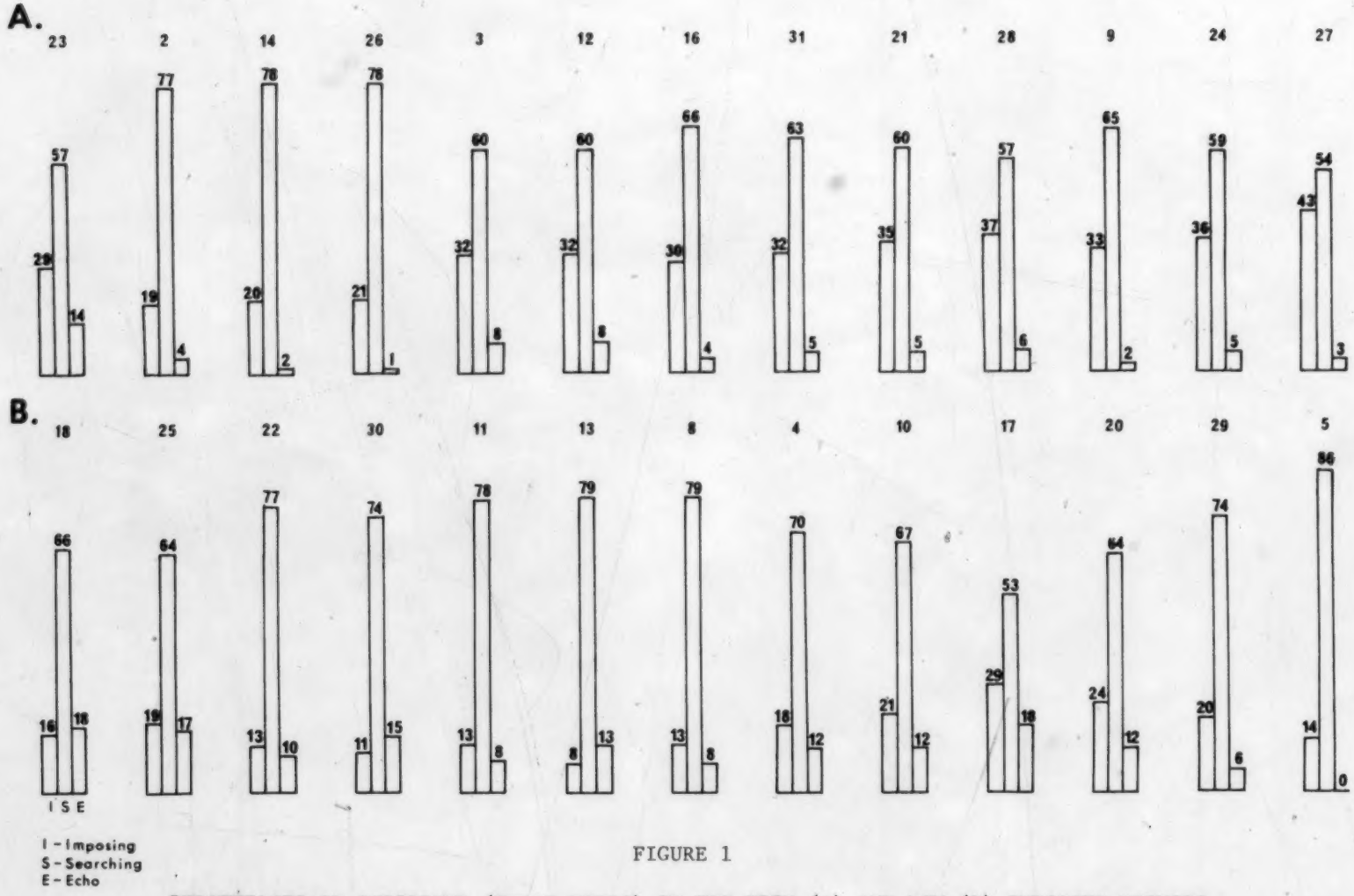


FIGURE 1

PERCENTAGES OF QUESTIONS (THREE KINDS) OF THE HIGH (A) AND LOW (B) IMPOSING MOTHERS

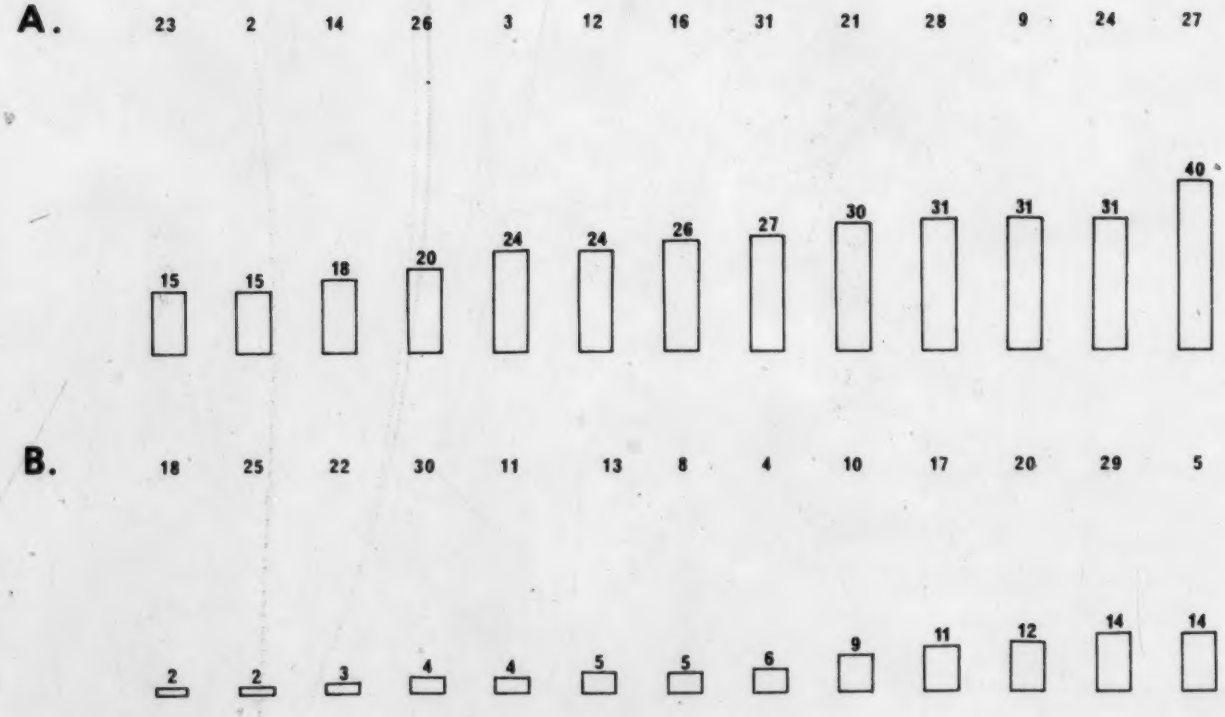


FIGURE 2

DIFFERENCES BETWEEN PERCENTAGES OF IMPOSING QUESTIONS AND ECHO QUESTIONS

should, as it seemed to be a composite of imposing some maternal control and at the same time indicating some respect for the child. As a result, it was assumed that S's Q's would not be able to differentiate the amount of control employed. The results on both Im's Q's and E's Q's substantiated the assumptions and the results were in the predicted direction. The histograms in Figures 3 and 5 represent the differences between the two groups of mothers in terms of Im's Q's and E's Q's. It was something of a surprise to find that the results on the S's Q's potential to differentiate the amount of maternal control was significant and in the direction (negatively correlated with maternal control) which indicated that respect for the child was paramount to imposing control. Figure 4 in effect is a pictorial representation of this difference.

The association between the amount of maternal control with firstly, the learning style and secondly, the achievement of the child was not significant. Part of the learning style (response latency) though not significant, went in predicted direction. On the basis of these results, there is little indication of a relationship between maternal control and cognitive development.

The association between maternal control and visual variables were all in the predicted direction with the duration of mother-child glances and number and duration of mutual glances being significant. These results substantiated Brady's (1969, p. 4) theoretical model of the mother-child relationship which is as follows:

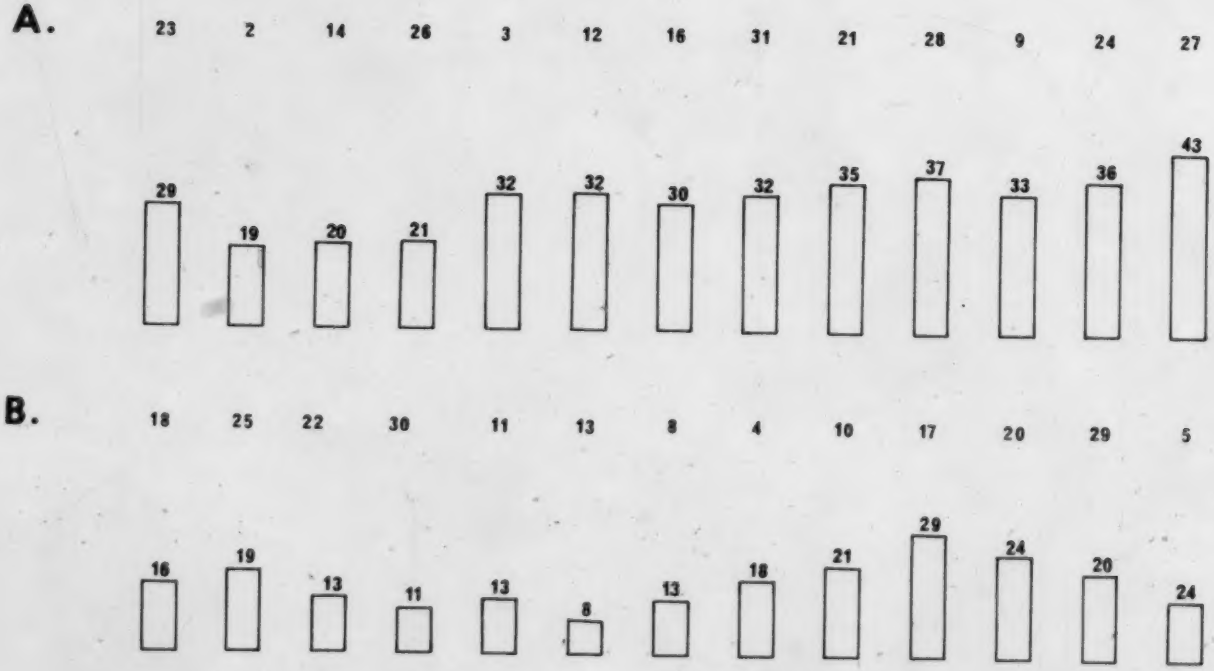


FIGURE 3

PERCENTAGES OF QUESTIONS (IM'S Q'S) OF THE HIGH (A) AND LOW (B) IMPOSING MOTHERS

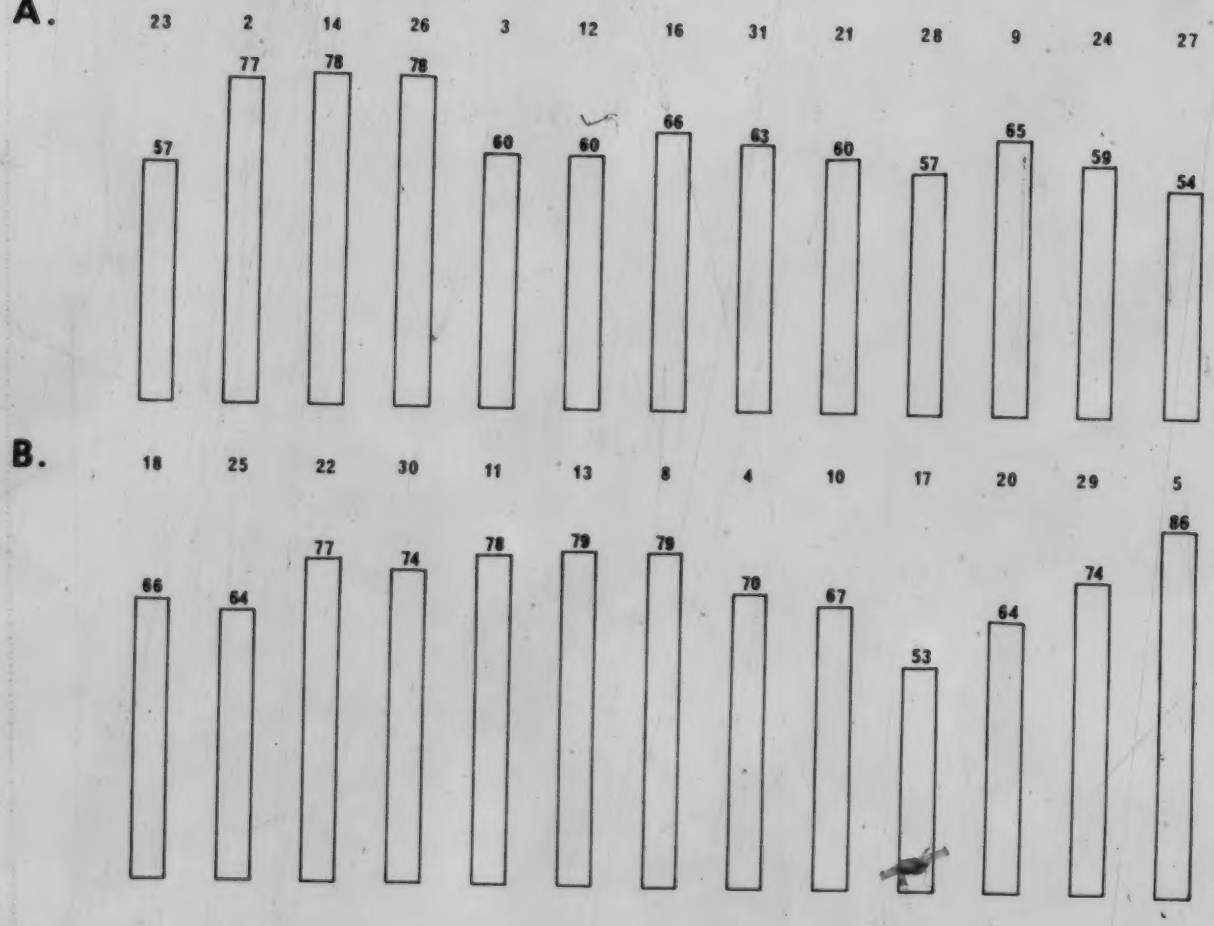


FIGURE 4

PERCENTAGES OF QUESTIONS (S'S Q'S) OF THE HIGH (A) AND LOW (B) IMPOSING MOTHERS

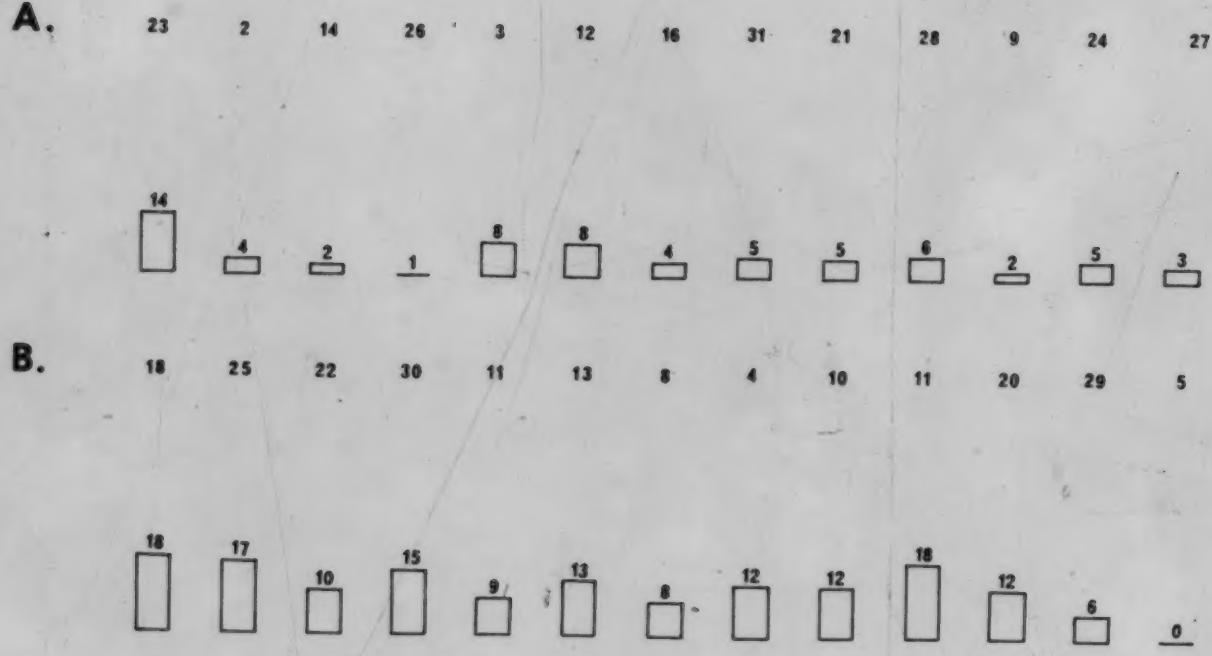


FIGURE 5

PERCENTAGES OF QUESTIONS (E'S Q'S) OF THE HIGH (A) AND LOW (B) IMPOSING MOTHERS

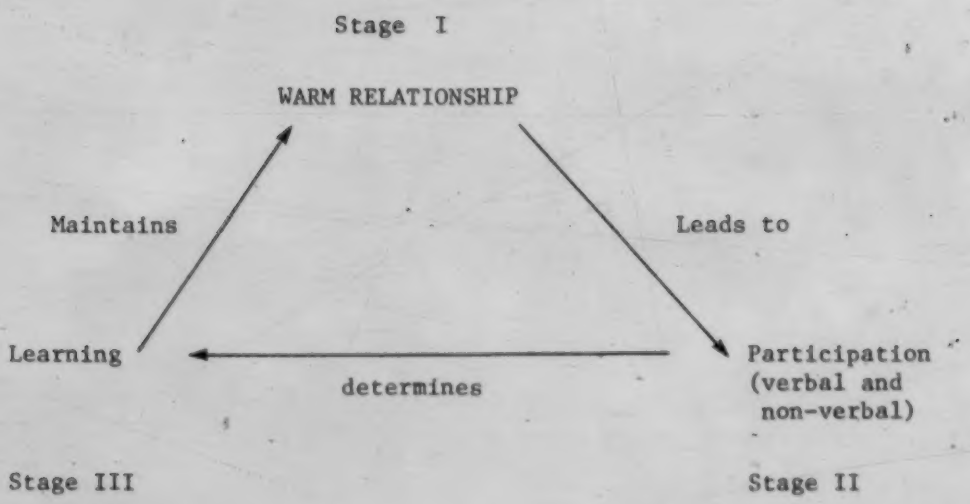


FIGURE 6

BRADY'S THEORETICAL MODEL

Brady hypothesized that certain maternal characteristics such as maternal attitude determined the warmth of the mother-child interaction. This warmth would tend to increase both verbal and non-verbal participation. Such participation would affect the child's learning. The kinds of learning experiences occurring between mother and child in turn, would affect the maintenance of warmth in the relationship. Brady (1969) hypothesized that "high visual interaction indicates warmth while low visual interaction might be expected in relationships termed as cold." This is the non-verbal reflection of warmth. The results of this study indicate that the verbal behavior (language) could be construed as another reflection of warmth.

Darrah (1971, p. 57) offers a minor change in Brady's theoretical model.

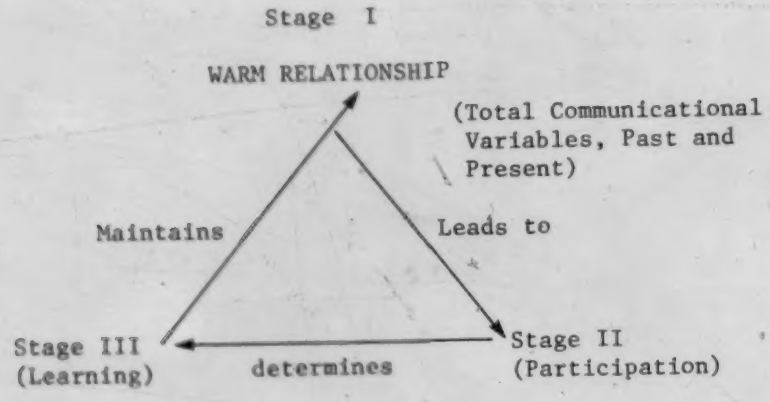


FIGURE 7

DARRAH'S THEORETICAL MODEL

Darrah was concerned with non-verbal behavior. Now, it may be expected that the "total communicational variables, past and present" would include both non-verbal (mutual glances) and verbal (questions) variables.

Werner and Kaplan (1963, p. 49) further suggest

> .....one issue of prime interest for study: the different characteristics comprising adequate symbolic formulations under varying degrees of interpersonal distance.

From the present study, "different characteristics" could be equated with imposing, searching and echoing information. It has been noted that questions, as "symbolic formulations", could be used as basic units of investigation and Pike (1967), Bloomfield (1933a) and Chomsky (1957a) have attested to its adequacy. "Varying degrees of interpers-

onal distance" is implied in the amount of maternal control that is present, with the greater the amount of maternal control indicating the least amount of interpersonal distance and with the least amount of maternal control indicating the greater amount of interpersonal distance.

Werner and Kaplan (1963, p. 42) speak of the "primordial sharing" situation within which the child is not able to differentiate himself from his mother, there is little or no distancing involved. This seems to be analogous to the mothers who impose information for here too, little distancing is involved. These mothers are similar to Bain's (1971, Abstract iii) immature perceivers who are:

> .....embedded in a world, with minimal polarization of his body and his world, with minimal consciousness of his body-as-subject and body-as-object of experience.

The mother's behavior verbal and non-verbal is egocentric, bound up with her own feelings, wishes and desires, in other words there seems to be a "polarization" of interest which is focused on herself with little or no differentiation of herself from others. In Schachtel's (1959, p. 83) words, these mothers are autocentric. This seems to be the essence of Im's Q's.

Mothers who use S's Q's seem to be able to shift more easily from imposing information (Im's Q's), mainly in an attempt to help the child understand or learn. There appears to be a "shift of function". Now there is some differentiation, the child is seen as another person, someone to be considered. "Polarization" of interest

is in terms of not only oneself but also in terms of the "other". The mother is able to maintain some distance from what is occurring and is able to reflect upon the situation. Schmidt (1973, p. 108) speaks of such increasing reflectiveness as being associated with

> .....what we may call distanciating oneself from what one is experiencing. By this is meant that instead of being lost in organic sensation or at the mercy of strong emotions or under the compulsion to act and react only, in the course of normal growth the child becomes able to reflect on these experiences - that is, to look at them from a greater distance. Language is extremely important here.

Another "shift of function" may take place, one most difficult, that from searching for information (S's Q's) to that of echoing or reflecting information (E's Q's) in such a way to maintain and reinforce the child's involvement in what he is doing. Navarra (1955, p. 31) indicates that:

> .....It should be made clear that the matter of asking questions was also considered a part of the process of building rapport. There was a specific attempt to avoid structuring questions which would be directional and provoke specific kinds of responses. Rather, the stress was on asking and answering questions in such a way as to elicit further clarification of the child's ideas.

It is difficult to put questions in such a way as "to elicit further clarification of the child's ideas." This may have been part of the reason for the statistically insignificant results found between maternal control and "subjective sort" achievement. Brady

(1969, p. 63) explained the lack of statistical significance on the basis that four year old children did not have the ability to effectively use language to explain their behavior. It does not appear to be a simple matter "to elicit further clarification of the child's ideas." It seems to require an ability on the questioner's part to maintain distance, so that flexibility, in shifting from the objective stance to the subjective stance or back and forth as the situation demands, needs to be maintained. Navarra (1955, p. 23) indicates that "the investigators language has important effects and influences on the responses of the child."

It seems that with the use of E's Q's there is the most distancing involved, firstly the differentiation between the mother and her child, secondly the differentiation between her love for her child and the kind of cognitive activity required to phrase the E's Q's in such a way as to draw out further clarification of the child's ideas. It is not always easy to maintain the distancing required.

The following sequence on the verbal interaction between mother and child is indicative of the importance of maintaining distance on the part of the mother yet, at the same time, having in abeyance, as a kind of backdrop to this verbal interaction, her respect and love for her child.

M. .....O.K., now we're going to put them in piles in a different way, Cheyrll.
C. Oh.
M. You just look at these. Now I'm going to put these in piles, and see if you can tell how they're the same.

C. O.K.
M. Are those the same in some way? (In's Q')
C. No.
M. Do you see around here? (S's Q')
C. Uh huh, uh huh.
M. Do you see this? (S's Q')
C. Uh huh.
M. And that? (S's Q')
C. Uh huh.
M. And that? (S's Q')
C. Uh huh.
M. Those are all the same in some way, aren't they? (In's Q')
C. Yes.
M. Now, look at those.
C. Uh huh.
M. Are those the same in some way? (In's Q')
C. Yes. Yes, yes.
M. They are? (In's Q') And what about those two, are they the same in some way? (In's Q')
C. Yeah.
M. And these two? (In's Q')
C. Yeah. Yes.
M. O.K. Now shall we mix them up and see if you can put them together like this.
C. O.K.
M. O.K.
C. Uh huh, O.K. Now...
M. Now, you see...you pick one and see if you can find others that have something the same (long pause).
C. Is that the same thing?
M. Um huh, these are the same. And that one now....is there one that looks like that, (In's Q') yes.
C. Yes, it is.
M. And that one too? (In's Q')
C. Is that the same in some way?
M. Yes. Now, and those two aren't.
C. That the same in some way?
M. Um huh.
C. Is that the same in some way?
M. And that is. Now, can you tell me anything about all the ones in this pile? (S's Q')
C. This, well, they have a circle.
M. Yes, those have a circle, don't they? (E's Q's)
C. Um huh.
M. What do we say, they're all.... (S's Q')
C. Round.
M. They're all round. Now, do you know, what about these? (S's Q')

C. Um.
M. How are those alike? (In's Q')
C. Well, those are like teepees.
M. They are like teepees, aren't they, both of them. (E's Q')
C. Um huh.
M. Um huh. And are all these the same? (In's Q')
C. Uh uh. Yes.
M. In some way.
C. Uh huh. And those look like hills.
M. Um huh. Do you know what we say, that in these piles they're all different....what? (S's Q')
C. The blocks.
M. The blocks are different. Um huh.
C. Lets look at these.
(the bell)

What may be noticeable in the foregoing sequence is the care and the observations the mother uses to help the child develop the concept of "sameness in some way". It is almost a microgenetic process in that small details are indicated to the child through her S's Q's. They are introduced at a pace consonant with what the mother considers is in keeping with her child's ability to conserve and utilize the information processed for her child. In listening to the mother interacting with her child, it is noticeable how clearly and slowly she enunciates the words so that there is as little room as possible for misunderstanding. This could be seen as part of the backdrop of her respect and love for her child.

This study, so far, has been concerned with the mother's behavior. In actuality, there is an interaction between the mother and the child. How may we describe the child's ability to react to the general intent of the mother, especially when it is couched in verbal activity, specifically, maternal control language. For communication to be effective, personal idiosyncracies need to be

held in abeyance and to be subordinated to the impersonal universal use of language in order to attain some measure of consensuality. Is it necessary for such consensuality to require identical connotation of the language for both mother and child? Werner and Kaplan (1963, p. 50) phrase it in these terms:

> ....we do not believe that consensus with respect to the meanings of verbal symbols requires identity of connotations in the different participants: the only requirement is that the connotations evoked in both addressor and addressee occupy a comparable position within each individual's personal network of meanings.

There is another aspect which may play a part in the development of relative consensuality. Gon (1970, p. 67) in her study of person perception, indicates that at the early age of five, the children "are already aware, in some way, of most of the dimensions which the sixteen-year-olds use." If an extrapolation may be permitted, generally speaking, it may be assumed that children of age five or even younger appear to be aware of most of the dimensions used in most areas of functioning. It might be assumed that young children often are readily aware of the general intent of the mother's maternal control language.

Concluding Statement

A question of why Werner and Kaplan (1963) felt that there was an "issue of prime interest for study" could arise here. It is noticeable how pervasive and important was the concept of distancing. Following on the heels of this thought might be the suggestions of investigating other grammatical structures besides questions which

could reflect such distancing. Also might it be that Werner and Kaplan's "issue" could lead to a clarification of one of the ways the logico-creative kind of person as spoken of by Fowler (1968, p. 36) could emerge? He states that he,

> ....would like to believe it possible for us to plant the seeds of logic in early childhood in ways which foster the interplay of creative imagination and logical reasoning throughout the course of life....

One of the ways to attempt to improve whatever situation is present might be through further clarification and understanding of the use or function of the three kinds of questions. One such study might be a developmental one, an investigation of the development of the kinds of questions present from early childhood. Further research in relation to the association of maternal control in terms of the three kinds of questions with the cognitive development of the child could be pursued. Fowler's (1968) article mentions some recent trends in the study of the emergence of cognitive processes. It may be only through working with language (research), taking the role of "craftsman-at-work" that a "sense of the language" may yet be gained (Welch, 1973). Not only may it lead to the discovering of one way of fostering social beings with "logico-creative styles" capable of withstanding the stress and strain of our present day culture, but it may also lead to an emergence of an understanding of how the basic need to know can be fulfilled.

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APPENDIX A

RAW DATA

RAW DATA

LEARNING STYLE AND ACHIEVEMENT DATA OF CHILDREN

	RL	E	OS	SS
2	78	17	36	4
3	76	24	27	0
4	71	15	36	6
5	119	16	36	7
8	73	14	29	0
9	70	17	30	4
10	66	6	36	4
11	159	3	36	6
12	48	17	36	5
13	71	28	36	2
14	42	16	30	0
16	64	15	28	0
17	130	3	15	0
18	217	13	27	1
20	113	11	36	7
21	114	9	26	4
22	232	12	29	1
23	101	12	29	1
24	42	20	24	1
25	45	26	36	0
26	48	19	23	0
27	72	14	36	8
28	62	14	36	0
29	71	21	26	3
30	42	39	12	1
31	81	16	36	2

RAW DATA

Mother	Maternal Control Scores	Number of MG	Duration of MG
2	15	22	9
3	24	4	2
4	6	51	32
5	14	92	74
8	5	32	15
9	31	14	5
10	9	29	19
11	4		
12	24	12	6
13	-5	39	14
14	18	4	3
16	26	31	19
17	11	22	16
18	-2	69	41
20	12	8	4
21	30	24	11
22	3	31	11
23	15	5	3
24	31	28	13
25	2	41	29
26	20	21	14
27	40	12	6
28	31	11	5
29	14	33	9
30	-4	58	4
31	27	11	2

RAW DATA

Mother	Number M-C Glances	Duration M-C Glances	Number C-M Glances	Duration C-M Glances
2	85	39	22	5
3	62	51	6	2
4	117	93	46	7
5	251	147	94	4
8	73	76	24	7
9	76	15	14	5
10	92	90	18	6
11				
12	88	45	22	7
13	1	152	55	9
14	62	19	30	6
16	129	138	28	4
17	135	112	29	8
18	175	65	64	13
20	70	57	18	4
21	152	132	56	11
22	67	60	45	17
23	92	52	14	3
24	115	44	67	14
25	111	71	35	12
26	99	62	20	5
27	37	17	29	6
28	35	5	33	7
29	110	59	44	5
30	93	132	38	6
31	169	112	42	8

RAW DATA

Mother	Total number of Questions	Frequencies			Percentages		
		Im's Q's	S's Q's	E's Q's	Im's Q's	S's Q's	E's Q's
2	73	14	56	3	19	77	4
3	65	21	39	5	32	60	8
4	110	20	77	13	18	70	12
5	88	12	76	0	14	86	0
8	115	15	91	9	13	79	8
9	104	34	68	2	33	65	2
10	91	19	61	11	21	67	12
11	55	7	43	5	13	78	9
12	65	21	39	5	32	60	8
13	165	13	130	22	8	79	13
14	45	9	35	1	20	78	2
16	61	18	40	3	30	66	4
17	120	35	63	22	29	53	18
18	74	12	49	13	16	66	18
20	87	21	56	10	24	64	12
21	82	29	49	4	35	60	5
22	60	8	46	6	13	77	10
23	72	21	41	10	29	57	14
24	75	27	44	4	36	59	5
25	58	11	37	10	19	64	17
26	82	17	64	1	21	78	1
27	56	24	30	2	43	54	3
28	79	29	45	5	37	57	6
29	69	14	51	4	20	74	6
30	80	9	59	12	11	74	15
31	68	22	43	3	32	63	5

APPENDIX B

INSTRUCTIONS TO THE MOTHER

INSTRUCTIONS

Please listen carefully to these instructions.

Because the instructions are long a summary of them is available to you. See the card beside you marked "Instructions". When you bring your child to this room after hearing these instructions this is what I would like you to do. First, let your child get used to the room. He may explore the room. Do this until you hear a bell.

Second, sit your child in a chair marked "C" and you sit in your chair.

Third, tell the child what each one of these toys do. For example, the gun shoots, the pop-a-ball pops up a ball, the blocks can be piled, the doll can be dressed, and the maze - the wooden box has two knobs that can be turned to prevent the silver ball from falling through the holes. Now spend some time yourself finding out what these toys do.

Four, both of you play with these toys but remain seated until you hear another bell.

Fifth, when the second bell rings place the maze over beside the gun and put the blocks in a clear spot in front of you.

Six, now show your child how to separate the blocks on the basis of color. The square holes can be used to put the separated blocks in. Now you practice separating the blocks by color. Place the different colored blocks in different holes. When you are showing your child how to do this and he finishes, ask him, "How do you know these blocks go here?" Try and get him to tell you that it is because they are a different color. For example, "all blue", "all orange", etc. When he is finished tell him why he separated the blocks, ring the bell, and I will come in.

Seventh, now when you hear a bell show him how to separate all the blocks on the basis of shape. Each different shape going into a different hole. You try it now. The circles go in one hole, triangles in another, rectangles in another and the odd-shaped ones in another. When your child completes this, once again ask him, "How do you know these blocks go there?" Try and get him to tell you why he separated the blocks the way he did. After he tells you ring the bell and I will come in.

Eight, when you hear the next bell, show him how to separate them on the basis of size. This part is usually more difficult. However, notice, that on each group of blocks of a different size

there is a name, for instance, 'lag', 'Bik', 'mur', 'cev'. All the blocks of 'lag' are different from those of a different name. All the 'lag' are tall and large, all the 'Bik' are thin and large, all the 'cev' are thin and small, and all the 'mur' are tall and small. You go ahead and separate the blocks.

You may teach your child to use the name on top of the blocks but he should also understand the difference in size. When he has finished separating the blocks, ask him: "How do you know these blocks go here?" Try and get him to tell you that it is because these are different in size, for instance, big and large, etc. When he has finished telling you, ring the bell. For each different separation you may show the child but then let him do it. For instance, you may give him an example by actually placing the different colors in different holes. However, after you show him place all the blocks back in front of him. If your child does not separate the blocks correctly you may correct him by telling him, but do not remove the blocks yourself.

Keep sitting and work as quickly as possible. All right the instructions are finished and you may go and get your child. Remember to look at your instruction sheet if you have any difficulty remembering what to do next.

Thank you.

APPENDIX C

BRADY'S LEARNING STYLE TEST

LEARNING STYLE TEST

Materials

Stopwatch, tally sheet, stimulus shield.

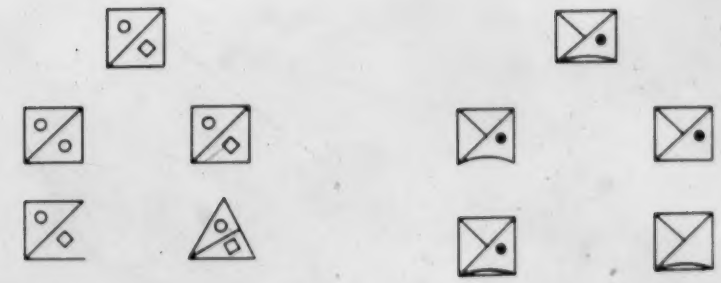
Instructions

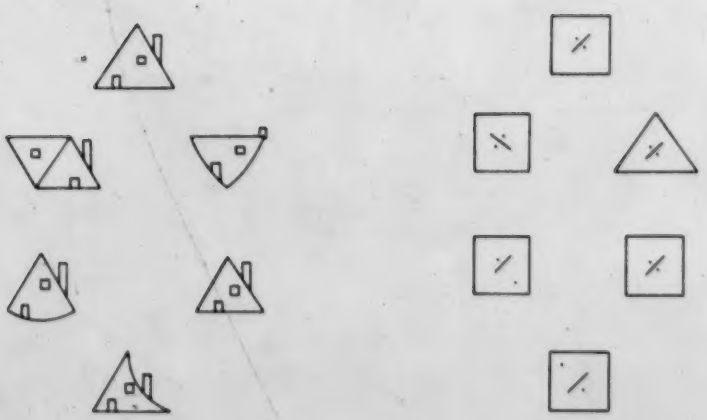
Place the sample card in front of the subject(s) with the array of designs shielded from his view but the standard design visible to him. Tell the S, "listen carefully to what I say. I am going to show you a picture and I want you to find another one just like it down here (point to array of designs underneath the shield). Look carefully and find a picture just like this one (point to the standard design). When you find the one just like this one (point to standard) put your finger on it." Let the S practice on the sample cards. If he makes any error correct him. If the S makes the correct choice say "yes" and go on to the next card. If the S fails to make the right answer say "no". Continue until he makes the correct choice.

Note

The test is designed so that an odd-even order of presentation is possible. This is convenient for obtaining internal consistency measure. Also, the odd-even order of presentation progresses from simple to more complex designs. Therefore, if all designs are to be given during one sitting too many consecutive failures are avoided.

SAMPLE OF CARDS FROM LEARNING STYLE TEST.

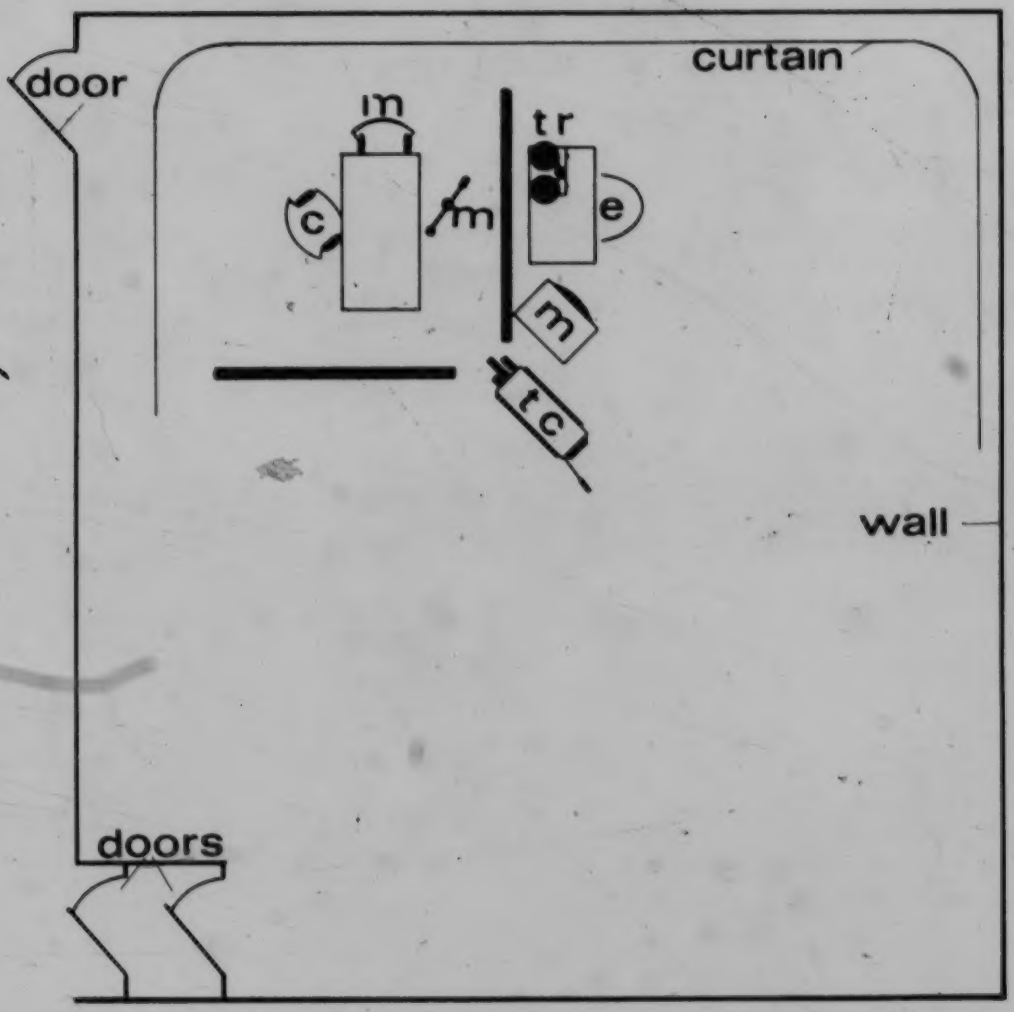




APPENDIX D

TECHNICAL ARRANGEMENT

THE TECHNICAL ARRANGEMENT



key

tc	TELEVISION CAMERA
m	MONITOR
e	EXPERIMENTER
tr	TAPE RECORDER
c	CHILD
m	MICROPHONE
m	MOTHER